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ABSTRACT

This master plan is intended for use by the governing board, administration, faculty, and community of the Maricopa County Community College District (MCCCD) as a standard against which progress in occupational education development and improvement can be measured. After Sections I and II provide a foreward and introduce members of MCCCD's governing board, administration, and task force on occupational education, Section III provides background material on the development and purpose of the five-year plan. Section IV presents definitions of key planning terms, including strategic planning, goals and objectives, and planning time periods. After Section V provides information about the planning environment, Section VI outlines underlying assumptions about political climate, future college role, local economy, enrollment trends, job training demands, population in-migration, student characteristics, staff, and flexibility and responsiveness. Section VII provides issues statements concerning external relations, internal processes, personnel issues, financial resources, public information, information needs, priority setting, student characteristics, delivery of occupational education, economic development needs, and placement. After Section VIII states the mission of occupational education in the district, Section IX presents goals and related objectives for each of the issues outlined in Section VII. Section X proposes a five-year capital plan, while Section XI reveals plans for evaluation and revision. Labor projections are appended. (AYC)

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OCCUPATIONAL EDUCATION MASTER PLAN 1981 — 1986

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Developed by:

District Task Force on Occupational Education

Maricopa Community Colleges

May 1981

JC 810 655

OCCUPATIONAL MASTER PLAN 1981 - 1986
Maricopa County Community College District
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I. FOREWORD

The Occupational Master Plan is a statement of the intended direction of occupational education in the Maricopa Community Colleges for the period of 1981 through 1986. It is intended for the use of the Governing Board, administration, faculty and community members as a chart against which progress in meeting the goals for new development and improvement in occupational education throughout the District can be gauged.

Comprehensive planning for a broad program area is new to the District, but the plan is flexible and can accommodate new external and internal pressures and needs. The plan will be subject to annual revision and with revision will take on greater clarity after the first two years of working with the plan.

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III. INTRODUCTION

Shortly after Dr. Paul Elsner became Chancellor of the Maricopa County Community College District, he wrote a paper raising current social and educational issues which indicated directions for change within the District colleges. The paper, referred to now as "The Chancellor's Blueprint for Long-Range Planning," called for the creation of a Joint Council on Educational Planning (JCEP). JCEP's membership is broadly representative of administration and faculty throughout the District.

JCEP, in two reports to the Governing Board, recommended that occupational education be a top priority for planning in the District. The first report stated a tentative goal for program development in occupations to meet market demands. The second report recommended the creation of College Task Forces and a District Task Force with the responsibilities for program assessment and master planning, respectively. To provide a link between the District planning group and the College Task Forces, some of the same people were selected to serve on both committees.

A staff development mode was the process selected to prepare the task force members for accomplishment of their goals.

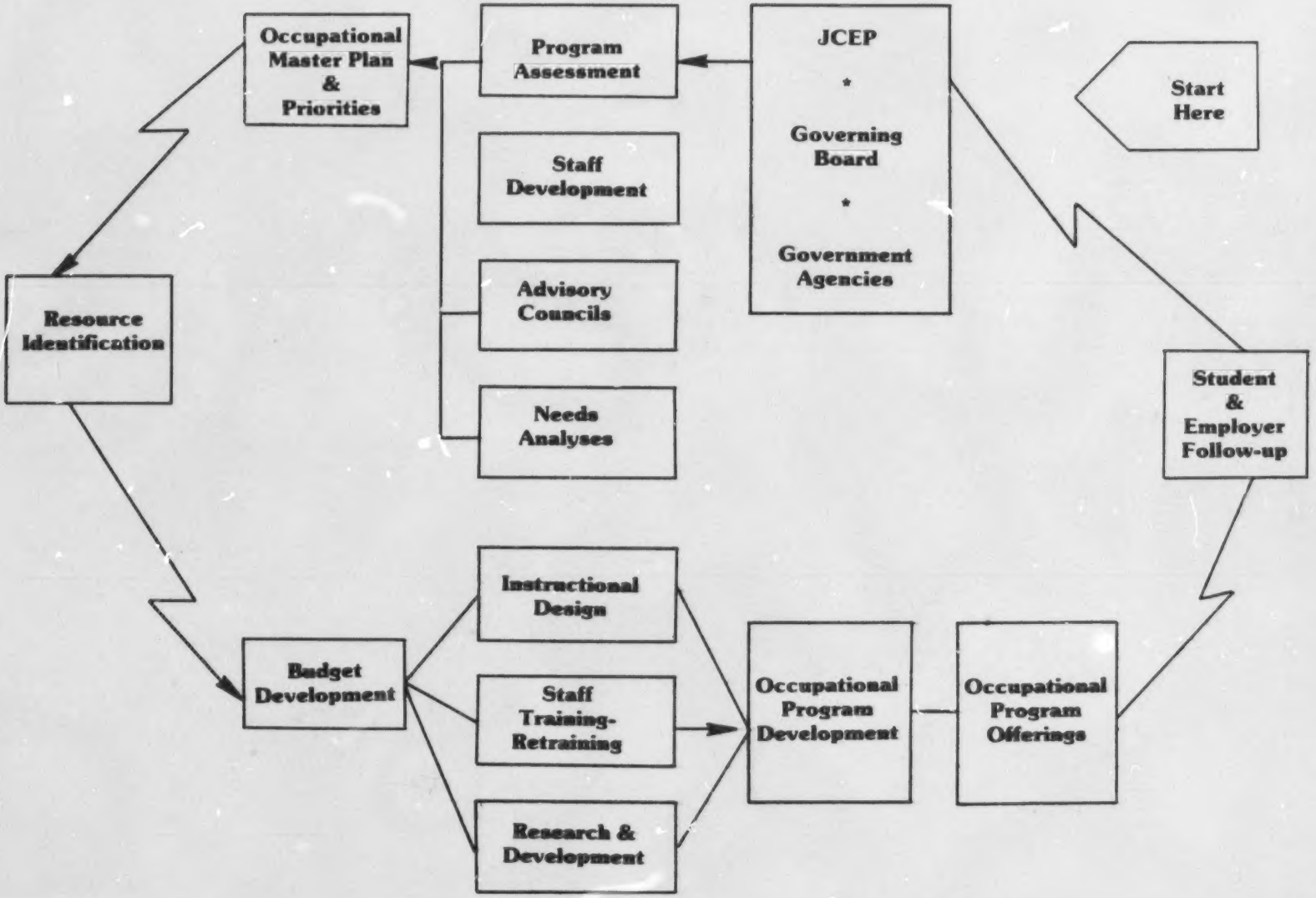
The staff development design requires that a group of people receive the same information and the same training for skill building in order that they may work in concert. The District Task Force members attended workshops and seminars throughout the academic year. Interspersed among the workshops were meetings for progress reporting and sharing of information. The process was repeated for the College Task Forces when members of the District Task Force shared their information and assisted their colleagues with similar activities. For example, the District Task Force chose a planning model, learned about planning and wrote elements of a master plan. The model and learning and work experiences were then repeated for College Task Force members.

The planning model selected by the Task Force incorporates directions for change from the environment and from assessment of current offerings. It links planning to the setting of priorities and the allocation of resources. It provides for staff and program development based on human and fiscal resources within a five-year time frame. Completing the cycle are implementation and evaluation. Following is a representation of the Cycle Plan for Educational Development.

The purpose of the District Master Plan is to provide an overall point of view, a District-wide consensus and a direction which can be readily understood. The plan charts the development of occupational education in Maricopa Community Colleges over a given period of time.

The Master Plan is also a tool for decision making, for allocating scarce resources and for articulating to the public what are the aims and goals of occupational education in Maricopa Community College District.

CYCLE PLAN FOR EDUCATIONAL DEVELOPMENT



IV. PLANNING DEFINITIONS

In order to accomplish the task of Occupational Master Planning, the District Task Force on Occupational Education found it helpful to have a clearer understanding of what was to be accomplished. Definitions provided a picture of what the end product in general terms would look like and what activities would need to be accomplished.

The following definitions gleaned from other sources were helpful in deciding: (1) the scope of the Occupational Master Plan; (2) the nature of the activities to achieve the plan; (3) the role of college occupational planning within the process; and (4) the time line to meet the goals for the Task Force established by JCEP.

Planning:

"An ongoing process by which an institution assesses its environment, changes or reaffirms its mission, establishes derivative goals and objectives, and then designs programs and courses of action to implement them." (Steve Van Ausdle, **Comprehensive Institutional Planning in Two-Year Colleges**, 1980).

Planning can be as limited as developing a plan to resolve a single issue or problem which results in a program plan. Master planning, on the other hand, is of necessity more comprehensive and broad, addressing a series of issues and problems in relation to a more global set of assumptions and general statement of institutional mission. The ensuing goals, objectives and/or recommendations and proposed activities reflect a consensus regarding a district-wide viewpoint toward the future of Occupational Education.

Assumptions:

"Corporate (Institutional) Assumptions are statements describing a future condition over which SRP (MCCCD) has little or no control. While they represent an expectation of a future occurrence, they should not be regarded as a prediction. Collectively, they are intended to describe an assumed future environment within which the SRP (MCCCD) will operate. The corporate (institutional) assumptions are important in communicating throughout the organization the view which senior management (US'N) has regarding the future." (**SRP, 1980 Corporate Planning Assumptions**).

Strategic Planning:

"It is the continuous process of making present entrepreneurial (risk taking) decisions systematically and with the greatest knowledge of their futurity; organizing systematically the efforts needed to carry out these decisions; and measuring the results of these decisions against the expectations through organized systematic feedback." (Peter F. Drucker, **Management** 1974).

Drucker's definition relies greatly on not trying to become a forecaster in planning, but rather making present-day decisions based on some assumptions about the future. The effort is to make present-day decisions that will have a lifetime and utility beyond today.

Mission and Scope:

If Drucker were defining this element, he might say that the definition of mission and scope would be the answer to the question, "What should our business be?" The answer to this question should lead to establishing goals which reflect not only instituting new programs, but also reaffirming present endeavors to be retained and earmarking some endeavors for elimination with a reallocation of those resources into new programs (Drucker, 1974).

Goal:

"A desired future state or condition which, if attained, will contribute to the achievement of the institutional mission." (Van Ausdle, 1980).

Objective:

"A desired future state or condition which, if attained, will contribute to the achievement of one or more institutional goals. Objectives are subordinate to goals and are more narrow, concrete, specific, and subject to measurement. The achievement of a goal will normally require the attainment of several specific objectives." (Van Ausdle, 1980).

Plan:

"A written document or documents setting forth the goals and objectives of the institution and specifying programs and courses of action designed to achieve them. Plans may include background information on the institution; mission and scope; goals and objectives; planning assumptions; policies and procedures for planning; description of programs; long-range projections of enrollments, resource requirements, capital and operating budgets, etc." (Van Ausdle, 1980).

Planning Time Period:

Projections of capital resources are being developed for the period of 1982-83 through 1986-87—a five-year period. Similar projections of operational resources will be developed for the same time periods. Planning for educational programs without attention to the resources available and the time periods of their availability could result in future frustration.

V. PLANNING ENVIRONMENT

Today, planning occurs within a context that is constantly changing. The data and facts gathered, the assumptions embraced will need change and revision as soon as initial plans are formulated. Therefore, any planning is only as good as the latest revision of the data and assumptions upon which planning is based.

With this in mind, the Occupational Master Plan was prefaced with information from both the external and internal environment of the College District. The background information reflected the following areas:

A. The impact of high technology—the growth of the electronics industry and demand for computing information services impacts related occupational programs, presents challenges to serve the community and portends to affect local and national lifestyles.

B. Labor market and high demand jobs—the growth of manufacturers in the local community has taxed our ability to meet demands for office workers, machinists, welders, electronic technicians, data processing specialists and business managers.

C. Population projections—"growth" is the key word to describe the trends, occurring principally to the West, Northwest and Southeast sections of the County. In-migration from the Pacific Coast and Mid West may swell the population to around two million by 1990.

D. Projected student enrollments—continued increases in FTSE will be about 2 to 4 percent per annum until 1990.

E. Projected capital and operational funds—current funding levels will create pressure as the funds to provide training to meet labor force demands will be scarce. New construction will be slowed as funds to operate additional facilities will not be as available as in the past.

F. Legislative impact—legislation passed in June 1980 put a cap on local property tax levies. The legislature has pursued some measures which provide limited and insufficient relief. More work with legislators, business and industry is needed to gain more understanding.

G. Assessment of Occupational Programs in the Colleges—information from the occupational program assessment on the plans for improvement of programs are essential to planning and identifying the common and diverse needs to assure quality occupational programs.

H. Direction of the economy—most local economists project a fairly rosy picture of the local economy starting in 1982. These predictions tend to be tied to the projected growth of manufacturing industries.

I. Student trends—current trends in the student population will continue. They will be increasingly older, part-time students, more women, higher percentage of minority students, vocationally oriented, and all categories of students will have relatively poor basic skill backgrounds.

The District Task Force on Occupational Education endeavored to keep this trend information in mind while formulating planning issues, mission, goals and objectives so that the plans advocated for the next few years would be relevant and workable in the perceived present and future environment of the District and the colleges.

Examples of background information used as a resource are included in Appendix A.

VI. PLANNING ASSUMPTIONS

A. Political Climate

National:

A new administration will not greatly alter the allocations to education at a national level. However, student financial aids will change probably to less grants and more loans. Levels of funding to post-secondary education will be moderately reduced.

State:

The State Legislature, State Board for Community Colleges and the State Department of Education will require increasing numbers of studies of programs, costs, faculty, etc., in a continuing concern about the performance of community colleges.

The State Legislature will be endeavoring to define the roles of secondary schools, community colleges and universities in vocational education. Mandates may be forthcoming which will require articulation and cooperation at each of these educational levels.

B. Future College Role

There will be pressure for the role of the community colleges in the county to move in the direction of occupational education and job training.

It will be necessary for the community colleges to look at job markets more specifically and to work more closely with specific business and industry advisory committees.

Business and industry will exert pressures on community colleges to train students to performance levels such that employers will not have to expend lengthy time and increased resources to make an employee productive. Employers will also expect students to come with good work attitudes and habits.

C. Local Economy

The local economy will experience growth over the next three to five years with steady growth of jobs in construction, government, technology and manufacturing, business services and trade.

D. Enrollment Trends

Student enrollments at the District Colleges will grow at a rate of 2 to 4 percent annually or more if the direction of education is changed.

E. Job Training Levels

High demand jobs will be those which require both relatively high levels of semi-professional and technical training and short periods of intensive training which take less than two years to accomplish.

There will be a high demand for inservice and continuing education programs.

F. Population In-migration

In-migration to Maricopa County is occurring at a rate of 4,000 persons per month. This level will continue and rise until Maricopa County has a population in excess of two million in the 1990's.

In-migration will continue to be a factor in population growth, and the newcomers will come with a variety of educational backgrounds. Some newcomers will be refugees from depressed economies and political situations and have very little or no educational background.

G. Student Characteristics

The students we will serve fall into two groups:

1. The "traditional" student, 18-22 years old, recent high school graduate and likely to attend full-time during the day. (About 40 percent of students were recently high school students.)

2. The "continuing" student, older, already employed, seeking employment upgrading, and part-time attender mostly in the evening.

In both of these groups, women and minorities will continue to increas in both number and percent of the student population. The amount of increase could be affected by recruitment, planning, organization and special programs.

Students will increasingly present themselves to the community colleges with more diverse backgrounds.

1. Depending on what occurs with them in high school, traditional students are likely to follow the national trend and be less well prepared than their predecessors. The likely outcome of this trend will be an increased need for developmental (basic) studies.

2. The continuing students are apt to present the widest range of background and skills. More students who already have a degree will return to obtain a specific skill. At the same time, it is likely that we will be asked to train individuals from CETA or the hard-core unemployed for entry-level positions.

Proximity will continue to be a factor affecting community college attendance. Energy shortages, the high cost of gas and greater travel times are likely to intensify this factor.

The transfer function will continue to play a significant role in the educational services we provide. However, there is a national trend away from "majors" in the traditional liberal arts program and toward business, technology and occupational education. This shift has been and will continue to be dictated by the job market and will encourage students to be more career oriented.

H. Staff

Staffing for occupational education will continue to be tied to traditional staffing methods for definition of qualifications and work loads.

Faculty cannot readily be retrained from areas of over-staffing to be capable of teaching in occupational program areas.

Qualified staff to teach in some occupational specialties will be very difficult to locate due to discrepancies in salaries between education and high technology industries.

I. Flexibility and Responsiveness

1. At the colleges—student services in the area of recruitment, career counseling and placement, developmental education as preparation for entry into occupational and transfer programs, and transfer education that help to round off vocational preparation—will be available to support new directions in occupational education.

2. Structures within the District such as Budget and Finance, Personnel, Educational Development and Computer Services—will be able to provide sufficient flexibility to accommodate new directions in occupational education given the continued support and commitment of administrative leadership.

Rapid implementation of quality occuptional programs will continue to be impeded by internal and external requirements for reporting, formulating, record keeping and other efforts at standardization and centralization.

VII. STRATEGIC PLANNING ISSUES

A. External Relations

Issue Statement: Occupational education is increasingly affected by the environment external to the College District and, in particular, by other educational entities, governmental bodies (Legislature, State Board, etc.), business/industry, advising councils and associations. The external environment creates pressures for institutional change and more strategic planning: the main concern in this issue is improving the quality of the community colleges' relationships with the external entities.

B. Internal Processes

Issue Statement: Occupational education planning is frequently hampered by the internal environment and unresolved conflicts in processes and procedures. Relative to human interactions, there exists inter-and intra-college competition, resistance to change and confusion over sources of decision-making and responsibility. There are conflicts in processes, policies and practices. The organizational structure is not always appropriate for particular tasks. There are unresolved program duplication/replication problems.

C. Personnel Issues

Issue Statement: Within the District there are unresolved personnel issues which affect the staffing needs of occupational programs and the loading requirements, assignments and salaries of current occupational staff. Clarification for role and hiring status of paraprofessional and part-time staff is needed. There is need of more effective methods of positive reinforcement for occupational faculty and staff. Hiring qualifications need to be appropriate to program needs. Staff development, particularly retraining, must be provided current faculty and staff. Accountability and evaluation are needed as are fair and systematic means for reduction in force.

D. Financial Resources

Issue Statement: Funding for community colleges has become increasingly competitive at the federal, state and local levels. Student tuition cannot be increased greatly without reducing enrollments. Static funding levels are eroded by inflation. Funding for special student populations (e.g., handicapped and developmental students) is inadequate. Allocation and reallocation of funds for occupational programs is hampered by the high cost of occupational programs and the fixed obligations to other programs.

E. Public Information

Issue Statement: The community is ill-informed about the College District. People need to know what the MCCCD occupational education mission is, what the colleges have to offer in the way of programs and how effective they are. There is a need to market programs to attract students and business and industry.

F. Information Needs

Issue Statement: In order to effectively plan and develop occupational programs and to inform business/industry and legislators about our efforts, we need data related to students, future enrollments, occupational program follow-up, placement, community and business/industry manpower needs, program content, and comparisions with similar training programs. Readily understandable and usable information that shows occupational program relevance, effectiveness and responsiveness is important. Information already developed by another source should be used rather than initiating studies from District resources.

G. Priority Setting

Issue Statement: With scarce financial resources the establishment of priorities for allocation of operational and capital resources to the most critical new and existing occupational programs and for elimination of non-essential programs is a concern. Who or what college will do what, when and in what order needs to be answered.

H. Student Characteristics

Issue Statement: The nature of our student clientele is continually changing, and requires continual assessment of who they are and their career plans and learning needs. Student characteristics such as minority status, age, sex, handicapping characteristics, entry skill levels, learning styles, geographic distribution, socioeconomic status, life style, nature of the interrupted educational experience, employment status and avocational interests need to be considered in occupational program revision and design.

I. Delivery of Occupational Education

Issue Statement: Occupational education is frequently hampered by adherence to traditional modes of delivery. Greater flexibility and efficiency may be

achieved by exploring alternatives in time, place, space, credit and non-credit offerings, scheduling, pacing, educational technology, use of facilities and differentiation of staff. Support services are needed to aid in the design of flexible approaches to preparing students for job entry or skills upgrading.

J. Meeting Needs for Economic Development

Issue Statement: the economic growth of the county depends on the rapid availability of trained personnel to perform the tasks of new and expanding business/industry. Liaisons with business/industry, planning groups and government agencies can direct us to the areas of need. Special programs for economic development training, job upgrade training, and faculty retraining are highlighted. Possibilities for business/industry/education collaboration on new approaches to funding, faculty job sharing, and retraining, equipment loans, and program development may exist.

VIII. OCCUPATIONAL EDUCATION MISSION

Occupational education in the Maricopa County Community College District operates as an integral part of the total community college educational system to benefit both individuals and the community. Its main purposes are to:

- Provide individuals with the skills to attain economic freedom;
- Promote the economic development of the County;
- Serve as a catalyst for community development.

Occupational education serves and is accountable to the following: adult students of all ages and previous educational backgrounds; business, industry and labor; persons with special educational needs, the disadvantaged, the handicapped, and senior adults. Occupational education is a program for all people, offered in all parts of the County.

In order to meet students' and employers' needs, the occupational education program is guided by these purposes:

- To equip individuals with marketable skills.
- To furnish individuals with information about work opportunities today and in the future.
- To help individuals develop and apply decision making skills regarding work and careers.
- To help individuals develop the basic educational skills required in the work they expect to perform.
- To prepare individuals to reach their goals of initial employment and in upgrading and retraining throughout their careers.
- To identify the current and future needs of the business and industrial community, particularly the new industries planning a move to the area.
- To develop new programs and tailor existing programs in response to the determined needs, sharing the responsibility with business/industry wherever possible and in the following manner—

in convenient locations, such as on college campuses, in plant, in community centers, agencies and industrial parks;

at convenient times, including afternoons at campus locations;

by customizing program, course and instructional design, using credit and non-credit options which may accelerate completion time for students;

through delivery to dispersed populations via telephone, video, radio, microcomputers, newspapers and other media.

- To provide a faculty whose knowledge and skills are current with their fields, particularly in the technologies, and whose teaching methodologies are relevant to the student population served.
- To collect, analyze and disseminate information regarding occupational education.
- To coordinate occupational programs with advisory councils and other local agencies and organizations.

IX. GOALS AND OBJECTIVES

The following goals and objectives have been developed in relation to the stated planning issues facing Occupational Education. Each objective states the Responsible Agent(s) for completing the activity and the proposed time frame for conducting the activity. Objectives are subject to periodic annual revision as experience with fulfilling the plan permits setting increasingly realistic time frames.

A. External Relations

GOAL: To establish formal processes for working with external agencies affecting occupational education.

Objectives	Responsible Agent	Timeline
1. Establish liaisons to interact with high schools and universities to improve student entry into and transfer from programs, to market programs and to maintain working relationships among faculty and others at all levels.	Department/Division Chairs and/or Program Director.	September 1982 -December 1983
2. Establish and formalize a district process to interact with all levels of governmental bodies which have a controlling impact upon the operation of the District.	Chancellor designee	1981-86 and Ongoing
3. Establish and maintain a framework for formal and extensive contacts with local business/industry, trade associations and professional groups.	Occupational Deans and Director of Occupational Education.	September 1981 - May 1986
4. Establish District-wide advisory committees for ocupational programs (which exist at two or more colleges) identified as District priority programs.	Occupational Deans Director of Occupational Education	1981-86 and Ongoing
5. Strengthen the relationship between college and community through improved utlization of advisory committees with a minimum of 5 workshops with 40 faculty and administrators.	Staff Development	August 1981- August 1982

B. Internal Processes

GOAL: To create an environment receptive to change in all facets of our operations.

Objectives	Responsible Agent	Timeline
1. Involve in District Task Force meetings on a periodic basis representatives from areas within the District which have impact on the occupational planning process (i.e., budgeting, accounting, personnel, purchasing, computer services, curriculum.)	District Task Force	Ongoing
2. Offer at least one staff development activity at each college on the topic of operating in a changing environment.	Staff Development	October 1981-May 1982

GOAL: To strenghten and improve both inter- and intra-college communications and relationships.

Objectives	Responsible Agent	Timeline
1. Improve within each college the formal communication network to facilitate information for occupational education planning, processes and procedures.	Occupational Deans College Occupational Task Force	August 1981-May 1982
2. Link the college communication networks at all levels (i.e., Presidents, Deans, Directors, faculty and staff).	Presidents Occupational Deans	August 1982 May 1983
3. Identify cooperative sharing projects between colleges and conduct a one-day workshop highlighting these as examples.	District Task Force	August 1981-June 1983
4. Conduct district-wide staff development activities supporting identified cooperative projects to maximize and promote intercollege linkages.	Staff Development	Ongoing

GOAL: To strengthen and improve relationships between the academic and occupational disciplines.

Objectives	Repsonsible Agent	Timeline
1. Hold joint meetings with Council on Arts and Sciences and District Advisory Committees on Developmental Education.	District Task Force	September 1981-May 1982

GOAL: To clarify processes, simplify procedures and assign decision making for occupational planning and program operation at appropriate, identifiable levels.

Objectives	Responsible Agent	Timeline
1. Review, evaluate and update occupational educational planning procedures.	District Task Force	Annual
2. Distribute to all concerned a document clarifying future occupational planning processes.	Director of Occupational Education	October 1981-December 1981
3. Review and revise job descriptions to pinpoint decision making levels.	Occupational Deans Deans of Instruction Director or Occupational Education	January 1982-September 1984

C. Personnel Issues

GOAL: To provide for employment and utlization of paraprofessionals in occupational skill training.

Objectives	Responsible Agent	Timeline
1. Prepare and adopt a personnel policy manual for paraprofessional instructional personnel.	Department Chairpersons Personnel Department Occupational Deans Deans of Instruction	November 1981- June 1982

GOAL: To develop policies to ensure adequate coordination of occupational programs by identifying specific responsibilities of program coordinators and developing policies for appropriate and equitable methods of compensation.

Objectives	Responsible Agent	Timeline
1. Establish guidelines for determining which occupational programs under what organizational structures will necessitate part-time program coordinators.	Department Chairpersons Personnel Department Deans of Instruction Occupational Deans	November 1981- January 1982
2. Prepare job descriptions and compensation plans for the position of program coordinator.	Department Chairpersons Personnel Department Deans of Instruction Occupational Deans	January 1982- May 1982
3. Implement hiring of needed program coordinators over a three-year period on a priority basis for each college.	Department Chairpersons Occupational Deans Deans of Instruction	August 1982- August 1985

GOAL: To facilitate the upgrading of technical skills of occupational faculty.

Objectives	Responsible Agent	Timeline
1. Allocate funds at each college to cover replacement cost for occupational faculty upgrading of technical skills.	Occupational Deans Budget Preparer	May 1982- July 1982
2. Develop criteria to select faculty for upgrading experiences.	Occupational Deans District Director of Occupational Education	January 1982- May 1982

3. Prepare guidelines for an exchange program for faculty upgrading with business/industry which includes an incentive program and alternative approaches.	Staff Development Occupational Deans District Director of Occupational Education	January 1982- May 1982
4. Obtain training opportunities and place faculty in at least 3 key areas of rapidly changing technology/process.	Staff Development District Director of Occupational Education	September 1982 - May 1983

GOAL: To continue review and evaluation of hiring qualifications to assure staffing of occupational programs.

Objectives	Responsible Agent	Timeline
1. Review annually hiring qualifications for the staffing of occupational programs.	Instructional Councils Office of Educational Development	September 1982, 1983 1984, 1985, 1986

D. Financial Resources

GOAL: To actively pursue federal and foundation financial support.

Objectives	Responsible Agent	Timeline
1. Identify external funding needs at each college (by project, equipment, etc.), where internal funds are not sufficient and where external funding may be feasible.	Occupational Deans Chairpersons	October 1981- May 1982
2. Identify and catalog sources of federal, state, foundation funding to meet department/discipline needs.	R & D Directors	May 1982- December 1982
3. Prioritize or target sources likely to yield results.	R & D Directors	May 1982 - December 1982
4. Coordinate applications for funding to same external sources.	Proposal Review Committee	August 1982 - August 1983
5. Prepare and submit application for funding from identified sources on established deadline dates.		

GOAL: To mount a unified state-wide political campaign to increase state funding.

Objectives	Responsible Agent	Timeline
1. Utilize occupational district-wide advisory councils to obtain legislative support for programs.	Advisory Council Liaisons	Fall 1981 and Ongoing
2. Inform faculty and department/division chairpersons of legislative events affecting occupational programs.	Occupational Deans	Fall 1981 and Ongoing

GOAL: To prepare a tuition and variable fee schedule as a contingency funding plan.

Objectives	Responsible Agent	Timeline
1. Conduct a feasibility study of a variable tuition and fee schedule for specific high cost/high demand occupational programs and, if feasible, outline a plan.	Presidents Occupational Deans	November 1982- May 1983

2. Establish a procedure by which programs generating fees obtain access to these revenues for program operation and development.	Presidents Occupational Deans Budget Office	November 1982- May 1983
3. Implement a variable tuition and fee schedule (if needed) with a budgeting process which returns revenue to high cost programs.	Budget Office Presidents	As needed

GOAL: To encourage business/industry to provide or loan euqipment and other resources for high cost occupational programs.

Objectives	Responsible Agent	Timeline
1. As district-wide advisory councils are established: (a) solicit the loan or donation of specialized equipment. (b) obtain participation in operational funding or specialized programs. (c) obtain assistance with start-up costs of specialized programs.	Director of Occupational Education Occupational Deans Program Faculty	1981 and Ongoing
2. Develop and maintain the local college advisory councils with business/industry representative to: (a) solicit loan or donation of specialized equipment (b) obtain participation in operational funding of specialized programs. (c) obtain assistance with start-up costs of specialized programs.	Occupational Deans Chairpersons Program Faculty	1981 and Ongoing

E. Public Information

GOAL: Identify the various "publics" served by the colleges, their educational needs and disseminate appropriate information to these "publics." Establish a mechanism by which information can be effectively and efficiently disseminated to the public.

Objectives	Responsible Agent	Timeline
1. Form a Task Force comprised of the college public information officers and District public information officers and District public information staff to develop a Five-Year Master Plan for public information (emphasizing occupational education) including at least the following: (a) identify publics to be reached with occupational information. (b) define roles of district, college and individual staff members — all who share in public information responsibilities. (c) describe and recommend information delivery approaches best matching the identified publics.	District Director of Public Information College Marketing Task Forces Occupational Task Force Representatives	August 1981-June 1982
2. Pilot a feasible number of public information projects targeting identified publics with a report on the strategy used, an assessment of the response, and an analysis of our ability to successfully target specific "publics."	District Director of Public Information	August 1982-June 1983
3. Continue piloting, refining, adding and maintaining public information delivery strategies which can be effective in matching occupational education programs.	Occupational Task Force District Director of Public Information	1983-1986

F. Information Needs

GOAL: To develop a complete student tracking system for students who have left a program.

Objectives	Responsible Agent	Timeline
1. Establish administrative and budgetary support and implement a system for tracking former occupational students as follows:	Directors of Research and Development	
(a) pilot project	Data Processing	Fall 1981
(b) full system operable	Analytical Studies	Fall 1982
2. Analyze all pertinent available data from tracking study for future planning and curriculum redesign.	Occupational Deans Deans of Instruction Chairpersons Director of Research and Development Analytical Studies	Fall 1982 and Ongoing
3. Conduct a workshop for 20 faculty and administrators on how to conduct a core-course occupational program follow-up as evidenced by the completion of follow-up studies of 12 programs (interim approach until tracking system in place).	Staff Development Occupational Faculty Analytical Studies	October 1981-December 1981

GOAL: To develop a systematic and consistent process for ascertaining community needs and business/industry manpower needs.

Objectives	Responsible Agent	Timeline
1. Establish an ad hoc committee with representatives of each college (Occupational Deans, R & D Director, Analytical Studies) to determine the availability of community, business/industry manpower training needs information.	Director of Occupational Education	October 1981-January 1982
2. With the ad hoc committee, determine community and business/industry information not available from other sources and design a method to gather this information.	Director of Occupational Education	January 1982-May 1983

G. Priority Setting Process

GOAL: To develop a process for establishing and implementing priorities related to strategic issues in occupational education.

Objectives	Responsible Agent	Timeline
1. Establish guidelines for directing resources to occupational programs based on the following factors: (a) programs where there is high employment demand as determined by needs assessments or manpower data. (b) programs where space, equipment, and staff are utilized to a maximum. (c) programs where upgrading is needed due to changes in standards or technology in the industry. (d) programs targeted by the college administration and faculty for needing particular attention. (e) programs where there is or will be space available to accommodate an expanded or new program. (f) programs where there is or will be staffing or other operational funds to accommodate an expanded or new program. (g) programs where there are possibilities for sharing with other colleges or business/industry to accommodate an expanded or new program.	Director of Occupational Education Priorities Subcommittee	March 1981 and Ongoing
2. Establish a subcommittee on priorities to review and prioritize needs for 1982 through 1987 and accomplish the following: (a) review and finalize guidelines (b) prioritize capital and operating budget needs (c) recommend funding levels for occupational program capital allocation 1982 through 1987 (See Five-Year Capital Plan).	Director of Occupational Education Occupational Deans Occupational Faculty	March 1981- Capital November 1981- February 1982- Capital and Operations Report Annually
3. Review duplicate programs annually in the District beginning 1981-82 and recommend elimination of one or more programs when no more than 30 new employees per year are needed to meet employment demand as related to business industry manpower studies. Give consideration to: (a) programs that pay as low as minimum wage. (b) programs that compete with high schools and proprietary schools. (c) programs that have low manpower demands.	Occupational Deans consulting with Instructional Councils and or Chairpersons	1981-82 and Ongoing

H. Student Characteristics

GOAL: To address the problem of revising occupational programs to match the needs of students:

a. Student Information System which provides appropriate data on student demographics and needs.

b. Evaluate occupational programs in comparison to: (1) the above data, (2) practices employed at other institutions of higher education, (3) the District's ability to properly fund the programs.

c. A systematic approach to program modification based upon the assessments, supported by appropriate incentive/rewards.

Objectives	Responsible Agent	Timeline
1. Establish a Student Information System (SIS) with appropriate mechanisms for review and revision.	Data Processing Analytical Studies Directors of R & D Admissions Personnel	Fall 1983- Spring 1985
2. Evaluate occupational program utilizing the revised and refined data in terms of: (a) instructional methods (b) funding support	Director of Occupational Education Occupational Deans Admmissions Personnel	Starting January 1984- Spring 1986

GOAL: To modify programs using the information developed through the improved SIS and assessment process.

Objectives	Responsible Agent	Timelinne
1. Develop, as appropriate, pre-program/developmental courses to provide competencies required for program entry.	Occupational Deans Program Directors Appropriate Faculty Director of Occupational Education Advisory Committees	1981-86
2. Modify programs to accommodate various skill levels of students.	Occupational Deans Program Directors Appropriate Faculty Director of Occupational Education Advisory Committees	1981-86

I. Delivery of Occupational Education

GOAL: To analyze current programs for duration, place of instruction, pacing, scheduling and staffing in relation to the essential content for job entry, upgrading and retraining.

Objectives	Responsible Agent	Timeline
1. Define and state minimum program competencies for each program.	Department/Division Chairs Program Coordinators Faculty Advisory Committees Instructional Design	August 1982 - May 1985
2. Identify locations for operation of occupational programs. (See Priority Setting Process)	District Task Force	May 1982 and Ongoing
3. Establish methods for planning and maintaining student progress in programs. (Dovetail with student characteristics SIS tracking system)	Program Coordinators Department/Division Chairs R & D Directors Faculty	January 1984- Spring 1985
4. Coordinate campus schedules to meet the needs of students in a program.	Department/Division Chairs Occupational Deans Program Coordinators	January 1983- Fall 1983
5. Coordinate District class schedules to meet the needs of students in complimentary programs.	Occupational Deans Deans of Instruction	January 1984- Fall 1984
6. Describe staffing patterns currently used in meeting program objectives for program: (a) student/faculty ratios (b) paraprofessional staff (c) intra-campus (shared) staffing	Department/Division Chairs Staffing Committees College Presidents	February 1982- August 1982

7. Establish staffing requirements necessary for successful operation of each program for the 1982-86 planning period.	Department/Division Chairs Staffing Committees College Presidents	Fall 1982- Spring 1986
8. Bring each program to minimum level for successful operation.	Department/Division Chairs Staffing Committees College Presidents	August 1983- May 1986

GOAL: To determine which instructional modes are best suited for occupational programs and field test options that have promise for improving student learning at a reasonable cost.

Objectives	Responsible Agent	Timeline
1. Analyze and compare a variety of instructional modes used in occupational programs and publish a manual of models illustrating these approaches.	Instructional Design	August 1981 - May 1982
2. Identify potentially effective and cost efficient modes of instruction and discard unsuccessful approaches.	Directors of R & D Occupational Deans Deans of Instruction Instructional Design	January 1983

GOAL: To determine which instructional modes are most appropriate for reaching dispersed and immobile populations efficiently and effectively.

Objectives	Responsible Agent	Timeline
1. Identify populations to be served by each college occupational program.	Directors of R & D	January 1982- January 1983
2. Provide a means for bringing dispersed student populations to the college through external grant funds.	Occupational Deans College Presidents Directors of R & D	August 1984- May 1985
3. Provide a means for taking occupational programs to the dispersed and immobile student populations.	Occupational Deans College Presidents Instructional Design	August 1984- May 1985

4. Identify potential off-campus teaching sites (Industrial, etc.).	Occupational Deans	May 1984- May 1985

GOAL: To provide supportive services and training to faculty to enable the redesign to define programs consistent with student and business/industry needs.

Objectives	Responsible Agent	Timeline
1. Identify supportive training services needed by faculty in occupational programs.	Staff Development	August 1981- May 1982
2. Design and implement training opportunities and support services for redesigning of program delivery consistent with student and business/industry needs.	Staff Development	Ongoing
3. Disseminate information on available training and support services to faculty provided by external agencies and by in-house program coordinators.	Staff Development	Ongoing
4. Acquire the instructional design skills and background knowledge to develop short-term (quick start up) and/or open-entry/open-exit occupational training in new and expanding occupational areas through workshops provided for both faculty and administrators.	Staff Development Instructional Design	August 1981- May 1982
5. Provide an orientation to the Arizona State Community College Board approved training materials for competency-based program development.	Staff Development Instructional Design	August 1981- May 1982
6. Provide 5 training sessions in the development of program competencies for 40 to 45 faculty and administrators.		

J. Meeting Needs for Economic Development

GOAL: To be an integral part of the county economic development model recognized as a primary provider of employees for business and industry.

Objectives	Responsible Agent	Tieline
1. Obtain training and participation for one or more district personnel to qualify for the Governor's tour to attract new industry to the State.	Chancellor Director of Occupational Education	August 1981- February 1982
2. Obtain membership and participation of the occupational administrators of each college in the local Chamber of Commerce.	Presidents Occupational Deans Vice Chancellor for Educational Development	June 1981- November 1981

GOAL: To develop a funding model which would allow a business or industry to share the cost of program operations.

Objectives	Responsible Agent	Timeline
1. In conjunction with a District-wide Advisory Council, pilot an industry/district liaison project to: (a) determine training needs for positions within an industry. (b) sharing of staff and equipment resources. (c) faculty temporary employment/upgrading training opportunities.	Chancellor Director of Occupational Education College Advisory Council Representatives	June 1981- June 1982
2. Design a new industry start-up model with a quick response to train entry-level workers to include employer cost and/or resource participation.	Director of Occupational Education Occupational Deans Instructional Design	August 1981- October 1982
3. Work with the State Community College Board, Chamber of Commerce, OEPAD to draft legislation supporting vocational education for economic development.	Chancellor Director of Occupational Education Occupational Deans	June 1981- December 1981
4. Design and print information on the District's Occupational programs to be used with the economic development community.	Director of Occupational Education Occupational Deans Program Managers Marketing Task Forces	October 1981- March 1982

K. Placement

GOAL: To clarify and strengthen the role of placement services in the District colleges.

1. Establish liaison between business/industry and college placement offices.	Occupational Deans Deans of Students Placement Officers	September 1981 May 1982
2. Survey students to determine placement services needed.	Occupational Deans Deans of Students Placement Officers	January 1982 May 1982
3. Implement activities for linking placement services to industry.	Occupational Deans Deans of Students Placement Officers	August 1982 May 1983

X. FIVE-YEAR PROPOSED CAPITAL PLAN

The Five-Year Proposed Capital Plan represents the efforts of the Occupational Deans, Department Chairpersons and faculty of each college to project the instructional equipment, facilities remodeling and construction needs for improving and expanding occupational education in the District.

The estimates have been reviewed several times by the colleges in an attempt to be as realistic as possible, and the instructional equipment needs have been prioritized by program and year.

Projecting needs in an area such as instructional equipment is difficult to do for more than a two-year time period since technology and manpower needs change so rapidly. Therefore, the needs are articulated more precisely for 1982-83 and 1983-84. For 1984-85 and beyond it is recommended that certain sums be set aside for instructional equipment and aligned to specific programs at a later date.

Funding for instructional equipment for occupational programs above and beyond the annual college allocation has not been traditional in the District over the years. Occupational programs have only received healthy allocations when a new facility was built with the expectations that the programs would not need substantial infusion of new equipment thereafter. As a consequence, with limited replacement funds and limited allocations to the colleges, many occupational programs are seriously deficient in the level of up-to-date equipment for training purposes.

It should also be kept in mind that the construction of additional square footage has serious implications for future operational budgets. As square footage increases, the costs of utilities, maintenance, repair and staffing will increase in order to make use of the facilities. Current limitations on operational funds could make extensive facilities expansion impossible to manage.

The District Task Force including Occupational Deans, Chairpersons and faculty understand that there may not be sufficient dollar flow to accommodate **all** the requests in the Five-Year Proposed Capital Plan as well as other capital needs in the District.

The administrators and faculty expect that they will be asked to make some revision to the request, utilizing the recommended priorities, as the District Five-Year Capital Plan for 1982-1986 takes shape. Naturally, it is hoped that revisions will not have to be so extensive that the goals and objectives of the District and College Occupational Education Master Plan cannot be met.

OVERVIEW OF OCCUPATIONAL PROGRAM CAPITAL NEEDS

By College

College & Program		1982-83	1983-84	1984-85	1985-86	Sub Totals	College Total
GCC	Equipment	$ 441,000	$ 395,000	$ 350,000	$	$ 1,186,000	
	Remodeling	132,500	60,500	35,900		228,900	
	New Construction	-	675,000	705,000		1,380,000	$ 2,794,900
PC	Equipment	207,975	154,160	309,000		671,135	
	Remodeling	784,000	-	-		784,000	
	New Construction	-	-	-		-	1,455,135
MTC	Equipment	268,572	134,700	300,000		703,272	
	Remodeling	167,480	52,000	26,000		245,480	
	New Construction	-	-	800,000		800,000	1,748,752
MCC	Equipment	344,650	248,850	202,000		795,500	
	Remodeling	-	-	200,000		200,000	
	New Construction	-	4,800,000	-	1,600,000	6,400,000	7,395,500
RSCC	Equipment	426,700	521,500	414,000		1,362,200	
	Remodeling	27,000	30,000	-		57,000	
	New Construction	-	-	-		-	1,419,200
SCC	Equipment	233,800	413,000	250,000		896,800	
	Remodeling	360,000	140,000	-		500,000	
	New Construction	-	1,000,000	1,000,000	1,200,000	3,200,000	4,596,800
SMCC	Equipment	225,000	137,500	300,000		662,500	
	Remodeling	-	-	-		-	
	New Construction	-	-	406,000		406,000	1,068,500
		$3,618,677	$8,762,210	$5,297,900	$2,800,000	$20,478,787	$20,478,787

REVISED ESTIMATES OF CAPITAL NEED

Occupational Program Capital Equipment Priorities 1982-83

College & Program	Priority #1	Priority #2	Priority #3	Priority #4	Priority #5	Priority #6	Priority #7	Priority #8	Priority #9	College Subtot
GCC 1-Electronics	$150,000									
2-Word Processing		60,000								
3-Data Processing			50,000							
4-Automotives				20,000						
5-Agriculture					6,000					
6-Quality Control						20,000				
7-Welding							75,000			
8-Mechanical Drafting								35,000		
9-Construction Drafting									25,000	$ 441,000
PC 1-Electronics	14,900									
2-Data Processing		51,000								
3-Emergency Med Tech			20,000							
4-Word Processing				20,000						
5-Medical Lab Tech					23,715					
6-Drafting-Machine Shop						51,400				
7-Dental Hygiene							23,160			
8-Nursing								1,800		
9-Middle Management									2,000	207,975
MTC 1-Allied Health	145,800									
2-Data Processing/ Office Ed		56,000								
3-Electronics			21,500							
4-Service Coordinator				8,000						
5-Solar Technology					15,000					
6-Advertising Art						10,000				
7-Automotives							4,212			
8-Nursing								4,060		
9-Drafting									4,000	$ 268,57

REVISED ESTIMATES OF CAPITAL NEED
Occupational Program Capital
Equipment Priorities 1982-83, continued

College & Program	Priority #1	Priority #2	Priority #3	Priority #4	Priority #5	Priority #6	Priority #7	Priority #8	Priority #9	College Subtotal
MCC 1-Electronics	$ 74,000									
2-Automotive		30,000								
3-Office Ed/Word Processing			30,000							
4-Drafting				70,650						
5-Data Processing					30,000					
6-Machinist						30,000				
7-Agriculture							71,500			
8-Welding								8,500		$ 344,650
RSCC 1-Electronics	195,000									
2-Apprentice Programs		45,000								
3-Management Training			141,700							
4-General Business				45,000						426,700
SCC 1-Business	31,700									
2-Nursing		15,500								
3-Data Processing			56,800							
4-Equine Science				46,000						
5-Interior Design					20,000					
6-Electronics						30,000				
7-Early Childhood							10,000			
8-Admin of Justice								23,800		233,800
SMCC 1-Data Processing	135,000									
2-Nursing		60,000								
3-Word Processing			25,000							
4-Office Education				5,000						225,000
82-83 Priority Totals	$746,400	317,500	345,000	214,650	94,715	141,400	183,872	73,160	31,000	$2,147,697

REVISED ESTIMATES OF CAPITAL NEED (continued)

Occupational Program Capital Equipment Priorities 1983-84

College & Program	Priority #1	Priority #2	Priority #3	Priority #4	Priority #5	Priority #6	Priority #7	Priority #8	College Subtotal
GCC 1-Automotives	$80,000								
2-Electronics		75,000							
3-Data Processing			60,000						
4-Drafting-Mechanical				70,000					
5-Word Processing					30,000				
6-Welding						30,000			
7-Construction Drafting							25,000		
8-Industrial Television								25,000	$395,000
PC 1-Electronics	46,000								
2-Data Processing		51,500							
3-Emergency Med Tech			20,000						
4-Word Processing				10,000					
5-Medical Lab Tech					8,950				
6-Drafting/Machine Shop						9,200			
7-Dental Hygiene							6,410		
8-Nursing								2,100	154,160
MTC 1-Office Education/ Data Processing	43,200								
2-Electronics		18,000							
3-Radiation Tech/ Resp Care			29,000						
4-Welding				7,000					
5-Solar/AC/Refrigeration					16,000				
6-Service Coordinator						12,500			
7-Advertising Art							5,000		
8-Diesel Mechanics								4,000	$134,700

REVISED ESTIMATES OF CAPITAL NEEDS
Occupational Program Capital
Equipment Priorities 1983-84, continued

College & Program	Priority #1	Priority #2	Priority #3	Priority #4	Priority #5	Priority #6	Priority #7	Priority #8	College Subtotal
MCC 1-Data Processing	30,000								
2-Automotives		25,000							
3-Electronics			24,000						
4-Word Processing				30,000					
5-Machinist					30,000				
6-Agriculture						48,000			
7-Welding							11,850		
8-Drafting								50,000	248,850
RSCC 1-Electronics	256,000								
2-Apprentice programs		35,000							
3-Management			115,500						
4-General Business				45,000					
5-Office Education					40,000				
6-Machinist						30,000			521,500
SCC 1-Electronics	150,000								
2-Business/Office Education		65,000							
3-Commercial Photography			30,000						
4-Hospitality/Management				50,000					
5-Nursing					10,000				
6-Data Processing						60,000			
7-Equine Science							28,000		
8-Tribal Management								20,000	413,000
SMCC 1-Drafting	70,000								
2-Office Education		37,500							
3-Business			25,000						
4-Nursing				5,000					137,500
83-84 Priority Totals	$675,200	307,000	303,500	217,000	134,950	189,700	76,260	101,100	2,004,710

REVISED ESTIMATES OF CAPITAL NEEDS

Occupational Program Capital Equipment Priorities 1984-85 Set Aside Request

College	1984-85	+	1982-83 1983-84 Request	=	1982-85
Glendale Community College	350,000		836,000		$1,186,000
Phoenix College	309,000		362,135		671,135
Maricopa Technical College	300,000		403,272		703,272
Mesa Community College	202,000		593,500		795,500
Rio Salado Community College	414,000		948,200		1,362,200
Scottsdale Community College	250,000		646,800		896,800
South Mountain Community College	300,000		362,500		662,500
	$2,125,000		$4,152,407		$6,277,407

REVISED ESTIMATES OF CAPITAL NEED

College	1982-83	1983-84	1984-85	1985-86	College Totals
Occupational Programs Remodeling					
Glendale Community College	132,500	60,500	35,900	-	228,900
Phoenix College	784,000	-	-	-	784,000
Maricopa Technical College	167,480	52,000	26,000	-	245,480
Mesa Community College	-	-	200,000	-	200,000
Rio Salado Community College	27,000	30,000	-	-	57,000
Scottsdale Community College	360,000	140,000	-	-	500,000
South Mountain Community College	-	-	-	-	-
Totals - Remodeling	1,470,980	282,500	261,900	-	$2,015,380
Occupational Programs New Construction					
GCC Ag/Auto Compound, inc equip	-	675,000	-	-	
Electronics/Welding, inc equip	-	-	705,000	-	1,380,000
PC	-	-	-	-	-
MTCC Welding/Auto Body Shop	-	-	800,000	-	800,000
MCC Technology Building/inc equip 60,000 sq ft	-	4,800,000	-	-	-
Business Bldg, inc equip	-	-	-	1,600,000	6,400,000
RSCC	-	-	-	-	-
SCC Nursing, et al, inc equip	-	1,000,000	-	-	-
Business Institute, inc equip	-	-	1,000,000	-	-
Equine Science, inc equip	-	-	-	1,200,000	3,200,000
SMCC Electronics Addition	-	-	406,000	-	406,000
Totals - New Construction	-	6,362,500	2,793,500	2,800,000	$12,186,000

XI. FUTURE DIRECTIONS — EVALUATION AND REVISION

The District Task Force will continue to meet during the next five years in the capacity of a planning and steering committee for accomplishing the goals and objectives of the 1981-86 Master Plan. The following tentative schedule of meetings has been set for 1981-82:

September 9, 1981
November 11, 1981
January 8, 1982
March 3, 1982
May 14-15, 1982

The District Task Force on Occupational Education (or its subcommittees) will participate in initiating several activities of the Master Plan, revision of the Occupational Program Assessment instrument, evaluation of progress in accomplishing the planning activities, and annually revising the plan to accommodate change, new directions, etc.

APPENDIX A

Background Materials

TABLE 1

MARICOPA COUNTY COMMUNITY COLLEGE DISTRICT

FTSE FOR 1971-1980 AND
PROJECTED FTSE FOR 1981-1985
FTSE PROJECTIONS BASED ON 1971-1980 OR 1976-1980 ENROLLMENT PERIODS

YEAR	DAY FTSE	EVENING FTSE	TOTAL FTSE
1971-72	12228	6033	18261
1972-73	12187	7350	19537
1973-74	11661	8404	20065
1974-75	14083	10487	24570
1975-76	16360	12195	28554
1976-77	15843	10567	26410
1977-78	15465	10542	26007
1978-79	15100	11013	26113
1979-80	15948	11368	27315
1980-81	15887	11966	27852

PROJECTED FTSE BASED ON 1971-1980 (TEN YEAR) PERIOD

CORRELATION COEFFICIENT (r)	.81	.83	.84
SLOPE (m)	485	564	1050
1981-82	17146	13096	30240
1982-83	17631	13660	31290
1983-84	18116	14225	32340
1984-85	18602	14789	33389
1985-86	19087	15353	34439

PROJECTED FTSE BASED ON 1976-1980 (FIVE YEAR) PERIOD

CORRELATION COEFFICIENT (r)	.25	.96	.82
SLOPE (m)	57	363	419
1981-82	15820	12178	27997
1982-83	15877	12541	28416
1983-84	15934	12903	28835
1984-85	15991	13266	29255
1985-86	16048	13628	29674

MARICOPA COUNTY POPULATION PROJECTIONS: 1980-2000

	TAI[1]	STAT ABSTRACT[2]	PHX 79[3]	PHX 80[4]	STAT REVIEW[5]	FORESIGHT[6]
1980	1,385,500	1,453,500	1,500,000	1,550,000	1,485,098	1,650,400
1985	1,587,845	1,621,941	1,800,000	1,900,000	1,656,200	N/A
1990	1,799,000	1,831,559	2,200,000	2,300,000	1,895,500	2,250,000
2000	2,260,000	2,352,000	N/A	N/A	2,443,000	N/A

[1]Tadlock Associates Inc. Long Range Master Plan for Maricopa County Community College District. Phoenix: Maricopa County Community College District, 1978. p. 17 (from Mag/CAPM)

[2]University of Arizona. Arizona Statistical Abstract. Tucson: Nat de Gennaro, ed. Northland Press, 1979, p. 21. (based on DES Planning Dept. data, July 1978)

[3]Arizona Republic and Phoenix Gazette. Inside Phoenix 1979. p. 8.

[4]Arizona Republic and Phoenix Gazette. Inside Phoenix: Update 1980. p. 3.

[5]Valley National Bank. Arizona Statistical Review. Phoenix: 1980. p. 7.

[6]Western Savings and Loan Association. Foresight Eighty. Phoenix: 1980. p. 8

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Compiled by Analytical Studies
10/24/80

TABLE 8

MARICOPA COUNTY COMMUNITY COLLEGE DISTRICT

HEADCOUNT FOR 1971-1980 AND
PROJECTED HEADCOUNT FOR 1981-1985
HEADCOUNT PROJECTIONS BASED ON 1971-1980 OR 1976-1980 ENROLLMENT PERIODS

YEAR	DAY HEADCOUNT	EVENING HEADCOUNT	TOTAL HEADCOUNT
1971-72	16121	13875	29995
1972-73	16735	16618	33353
1973-74	16700	19853	36553
1974-75	21573	22574	44147
1975-76	26096	23490	49586
1976-77	22858	25383	48241
1977-78	22513	26482	48995
1978-79	23235	30822	54057
1979-80	25572	32018	57590
1980-81	24474	35540	60014
PROJECTED HEADCOUNT BASED ON 1971-1980 (TEN YEAR) PERIOD			
CORRELATION COEFFICIENT (r)	.83	.99	.98
SLOPE (m)	1026	2250	3276
1981-82	27231	37040	64269
1982-83	28257	39290	67544
1983-84	29283	41540	70820
1984-85	30309	43790	74096
1985-86	31335	46040	77372
PROJECTED HEADCOUNT BASED ON 1976-1980 (FIVE YEAR) PERIOD			
CORRELATION COEFFICIENT (r)	.78	.98	.98
SLOPE (m)	629	2585	3214
1981-82	25618	37804	63420
1982-83	26247	40389	66634
1983-84	26876	42974	69848
1984-85	27505	45559	73062
1985-86	28134	48144	76276

Labor Supply and Demand: Do They Match?

Estimating the number of people available to fill job openings is perhaps the most difficult part of analyzing our modern labor market. But knowing about the labor supply is of vital importance to business and industry, training and educational programs, and governmental agencies. Therefore, the official unemployment rate has become a critical measure of the oversupply of workers. However, such a broad and generalized rate scarcely meets all the needs of the wide variety of users.

What Is It?

Simply speaking, the basic labor supply is the number of individuals working or seeking work at a given time. Actually, this is the same definition as that for the labor force. Although labor force statistics are available for most labor market areas on a monthly basis, these data do not separate the number of workers seeking employment within various occupations, which is the information needed by most users.

An additional labor supply source is those persons who are in limbo between employment and unemployment. For instance, homemakers and retired persons, who may be willing to return to work are not counted. Other discouraged workers are no longer actively seeking work because they feel jobs may not be available. Current labor market survey programs cannot identify workers who are underemployed or employed in one occupation but qualified to work in another. So one can conclude that the labor supply of an area is somewhat larger than its labor force.

Sources of Workers

So why is the labor supply so difficult to determine? Mainly because of the wide variety of sources of workers. The majority of new entrants into the labor market come from educational facilities. You don't need a lot of statistics to tell that the closing of school in the spring brings a flood of new applicants into the local job market. Since these recent graduates have little experience or training, they generally compete for low-skill entry-level jobs which already suffer from an oversupply of applicants.

Training programs form another supply of new workers. Vocational education facilities and community colleges are attempting to fill the gaps in the labor market for skilled and technical workers. Other colleges and universities supply workers mainly to professional and technical occupations. Recently, engineering, nursing and technical graduates have been in high demand, while many liberal arts majors face keen competition for jobs.

Migration into Maricopa County accounts for a large proportion of our labor supply. People are moving to the Valley of the Sun in record numbers. The majority of our new residents are experienced managerial, clerical and sales workers, according to a recent survey,[1] and provide stiff competition for Arizona job seekers.

1 "Out of State Job Seekers' Survey." Occasional Paper. Arizona Department of Economic Security. Jan. 1978.

The labor supply pool is constantly in a state of flux because even when there is full employment, workers move between occupations. Most people are said to hold about eight different jobs in their lifetime, which may involve two or more different occupations. Many of these transfers occur because people are underemployed, or working at an occupation for which they are overtrained.

The final supply of workers come from outside the labor market. Homemakers are a good example, as they frequently seek employment after raising children. Veterans of the armed services and handicapped persons, who have received rehabilitative services, are also entering the supply from outside the labor force.

This description of the labor supply makes it pretty obvious that hard numbers of occupational supply are difficult; if not impossible, to come by! Therefore, the statistics gathered by Job Service comparing registered applicants to available job openings provide a good source of data on the labor supply (see table 14). Of course, not all job seekers register with Job Service, but the ratios of applicants to openings have been shown to be indicative of the job market over time.

Demand - The Other Side of the Coin

It's pretty hard to think of the labor supply without relating it to the job market. Jobs come into high demand for primarily two reasons. If the employment is high in an occupation, there probably is a large number of jobs open continuously to replace workers who die, retire or leave the labor force. The second category consists of those occupations which are growing rapidly. However, even jobs with only small numbers of openings may be in high demand if there are no applicants available.

After selecting career options based on interests and abilities, the wise job seeker will look for an occupation with a high demand and a low supply of applicants.

Where the Jobs Are

Professional and Technical Occupations. Engineers and technicians, particularly in the electronics field, continue to be in high demand throughout the county. Phoenix has recently been cited as a national center of electronics research and manufacturing, as several large firms dot the Valley.

Registered nursing positions have been very difficult to fill. Several hospitals initiated nationwide recruiting. Computer specialists, such as programmers and systems analysts, remain in high demand as few applicants have the necessary experience. Wages continue to rise.

Clerical and Sales Occupations. Clerical jobs continue to be the largest and fastest growing group in the county. Instead of eliminating jobs, the increased use of computers and other office equipment has broadened the capabilities of clerical workers and reduced many tedious duties. Although

many entry-level jobs are available, workers with special skills will find the best job opportunities. Secretaries able to use Word Processors (or computerized typewriters which are actually more forgiving than conventional typewriters) are in very high demand.

Sales Occupations. These jobs are nearly always in high demand due to high turnover among salesworkers and the fact that many jobs offer a commission instead of a salary. Often job seekers are unwilling to risk the uncertainty of a strictly commission income. Retail sales clerk positions may offer entry-level positions with excellent opportunities for advancement.

Service Occupations. Since tourism remains an active stimulus to the Maricopa economy, jobs in various service occupations are frequently in demand. Waiters, waitresses and guards are the jobs most frequently listed with the Job Service. Although an oversupply of cooks exists, most have only fast food experience, the demand for well qualified dinner cooks continues high. Nurse's aides and orderlies are in demand although undesirable hours and difficult working conditions create a surplus of experienced applicants.

Farming Occupations. Low wages and long hours discourage many job seekers from farm labor jobs. The supply of these workers is large, but many positions go unfilled for long periods. A limited number of landscaping or groundskeeping jobs may offer some opportunity for advancement.

Machine Trades Occupations. As in many other fields, the demand is primarily for well trained, skilled workers. Auto mechanics frequently lack the experience to retain a job and thus openings continue at a high level.

Bench Work Occupations. Several electronics firms in the Valley maintain a fairly steady demand for various assembly workers. Most employers provide on-the-job training for these jobs. Since the electronics industry is growing rapidly these jobs should be in increasing demand.

Structural Work Occupations. The booming construction industry in Maricopa County has kept many structural jobs in high demand. The greatest need has been for skilled carpenters, although other crafts workers have also been in short supply.

Miscellaneous Occupations. Drivers of light delivery and industrial trucks have been in steady demand throughout the year. These workers frequently move on to long distance driving jobs, attracted by higher pay. Material handling and construction worker jobs are frequently in demand although wages are generally low for these entry-level positions.

From: Arizona Labor Market Review, 1979, pg. 36

High Demand Jobs - Arizona

Jobs may be classified as high demand for several reasons. Large occupational groups, such as clerical workers, continually need replacement workers for those who die, retire or leave the labor force. New or expanding industries must hire many new workers in addition to those needed for replacement. A third cause of high demand jobs is the lack of available workers. This frequently occurs when new machinery or methods are introduced and new workers must be trained, or when training facilities or schools are not able to produce enough skilled workers.

The demand for workers is always tempered by the supply of labor. Whenever more workers are available than necessary to fill job openings, competition becomes stiff and the intensity of demand falls.

Despite healthy growth in the Arizona economy over the past year, the job market remains relatively tight. High demand occupations are limited. Record migration into the state is primarily responsible for the keen competition for jobs experienced by many job seekers.

Before describing some of these occupations, first a note on the statistics. Job Service comprises the largest and most comprehensive source of information about the job market. Data available through Job Service generally reflect conditions in the economy as a whole. Projections of the job market in years to come are based on the assumption that the economy will remain relatively stable and that current social and technological trends will continue.

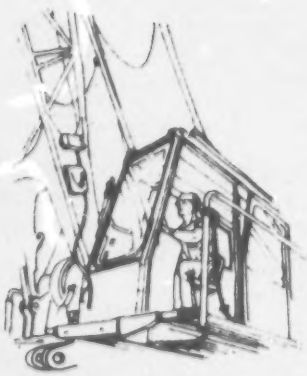

Table 19 summarizes high demand jobs in Arizona for those occupations with high employment. The projected 1985 employment figures are probably somewhat conservative.

Table 18 details those jobs most frequently listed by Job Service in nonmetropolitan Arizona. The "months of experience usually required" shows whether the jobs may be entry-level positions. Wages generally vary considerably depending on the place of employment and the applicants' training and experience.

Professional and Technical Jobs

Among professional occupations, Arizona statistics reflect the high worldwide demand for engineers. Electrical engineers should find about three times as many job openings as other types of engineers until 1985. Manufacturing industries are the largest employers of these workers.

Opportunities are particularly good for women and minorities in all areas of engineering. Although Arizona universities have reported record enrollments in this field, the supply of graduates has not kept pace with the increasing demand.

Coupled with this demand for engineers is the need for qualified technicians. Electronic technicians and drafters should find the best employment opportunities. These jobs require some post-high school training but generally not a four year degree.

Our sunny climate has attracted large numbers of people to Arizona for health reasons. The medical field offers a variety of high demand jobs as hospitals and clinics continue expansion. Registered nurses will be in the highest demand. Physicians and medical technicians should also find ample opportunities. The proliferation of sophisticated equipment will add many jobs not now in existence.

Although teaching has been long considered a high demand occupation, this is no longer the case. The Phoenix and Tucson areas suffer from a large oversupply of teachers while these same jobs often go unfilled in rural areas. Secondary school and college positions will decline slightly from the 1974 level although elementary teachers will experience some improvements. There is currently a growing demand statewide for teachers of the handicapped, since public schools must now provide additional services.

Accountants, auditors, and financial managers are other high demand occupations in Arizona. Like many professional positions, these jobs usually require a college degree and previous experience.

Clerical and Sales Occupations

During the past decade clerical jobs have been transformed by a barrage of modern, often computerized, equipment. Many had predicted the demise of the secretary, but they were proven wrong. The field is going strong and growing rapidly. The large numbers of young women in this field partly account for the high turnover rate, and thus high demand, as they leave the labor force to marry or raise children.

General secretaries, typists, bookkeepers and cashiers are the largest and fastest growing groups. Basic clerical skills can gain a person entrance to most of these jobs, but chances for promotion can be increased with knowledge of computers and other office equipment.

Real estate agents and brokers and retail clerks are the largest groups of sales workers. The steady growth of retail sales should keep this field open for many years to come. Many entry-level jobs with career promotional opportunities are available in retail trade.

The success of real estate agents depends largely on individual abilities and familiarity with the area. Although it is a rapidly expanding field, these are not generally considered high demand jobs due to the intense competition.

Service Occupations

Arizona's reputation as a service oriented state is growing. Employment of health service workers, particularly nurses' aides and orderlies will nearly double by 1985. The food service industry has continued steady growth during the past year. Experienced cooks, waiters and waitresses will be in high demand in this field. The Department of Labor recently announced the establishment of cook apprenticeship programs. Graduates of these apprenticeships should be in very high demand.

Crafts and Kindred Jobs

The booming construction industry in Arizona has led to the high demand for skilled crafts workers. Carpenters are the largest group of crafts workers. Electricians, plumbers and painters should also find employment opportunities. Concerns over the possibility of a construction slowdown may put a damper on some jobs. Young people entering this field should also be advised of the temporary nature of many of these occupations.

Although auto mechanics comprise a large and growing group of workers, they are also frequently found on unemployment rolls. Part of the problem may be the absence of certification for mechanics. This forces applicants and employers to meet on rather uncertain grounds. New applicants should plan to enter training courses before seeking work.

Operative Jobs

Operatives are workers who run various types of equipment. Growing manufacturing and construction industries are requiring increased numbers of these workers. Truck drivers make up the largest group in this category. Electronic and other types of assemblers are the fastest growing occupations.

Sewing machine operators, welders, examiners and delivery workers should also be able to find good employment opportunities until 1985. Many entry-level jobs requiring little experience are available in these fields.

"Good" jobs do and will continue to exist in Arizona. The trick is for job seekers to gain the skills necessary to locate job openings and secure employment. In a complex economy such as ours, this can be a difficult process. It's up to the applicant to find out everything possible about the job market before trying to compete. Arizona's economy is stronger and steadier than ever before. Opportunities await those ready to meet the challenge.

Table 18
JOB BANK FREQUENTLY LISTED OPENINGS - SUMMER 1978 - NONMETRO, ARIZONA

D.O.T. Code	Occupation	Openings Available	Yrs. Educa. Usu. Required	Months Exp. Usu. Required	Average Wage Per Hour
075.378	Nurse, General Duty	61	13-15	0	$5.06
079.368	Medical Assistant	40	12	7-12	4.16
099.368	Study Supervisor	64	16	0	7.26
209.388	Clerk, Typist	51	0-11	0	3.11
209.588	General Clerk	47	0-11	0	2.85
311.878	Waiter, Waitress	97	0-11	0	2.65
313.381	Cook	51	0-11	0	3.17
318.887	Kitchen Helper	74	0-11	0	2.66
413.887	Ranch Hand	65	0-11	1-6	INA
465.887	Forest Worker	67	0-11	1-6	4.72
620.281	Auto Mechanic	44	0-11	0	4.35
787.782	Sewing Mach. Operator	46	0-11	0	2.70
899.887	Maintenance Repairer	40	0-11	0	3.38
915.867	Auto Service Attendant	44	0-11	0	2.67
922.883	Construction Worker I	35	0-11	0	2.88
962.887	Construction Worker II	38	0-11	0	3.73

Source: Job Bank Frequently Listed Openings, Job - Flo District Summary Nonmetro Arizona. U.S. Department of Labor. Summer 1978.

Using Employment Projections

Career planning can be made much easier by the use of employment projections. Unfortunately, many people are not sure of how to use them, however, once understood, they can become a useful tool for planning.

After the career planner has selected some fields of interest, employment projections can help to narrow down the choices to specific jobs. So what is an employment projection?

Labor Market Information employs the method established by the U.S. Department of Labor. Occupational employment is derived from the decennial census. Projections state that if the same conditions exist for the future, such as levels of employment and population, then the demand for persons in an occupation will be at a specific level.

Industry and occupational projections include job openings due to growth plus those due to separations from the labor force such as death or retirement. They do not include openings resulting from labor turnover, created when workers change jobs. Because labor turnover is regarded as the largest source of job openings, the actual number of vacancies will be much greater than those listed in projections. This is especially important in certain occupations such as clerical and sales, in which turnover is particularly high.

National projections are long term to 1985 and do not consider those factors which may affect outlook in the short-run such as the business cycle. Thus, an occupation with a good outlook to 1985 may experience cyclical downturns. A temporary drop in construction, for example, might not affect the need for architects but may reduce the current demand for construction workers.

Prospects also vary by geographic area. Even state or county breakdowns of data may not be able to predict all local trends. Employment prospects for an occupation also may vary by industry and be substantially determined by the performance of the industrial group. For instance, carpenters may find fewer but more stable jobs in manufacturing than in the volatile construction industry.

Assumptions

Projections are based on certain assumptions about the economy during the projection periods. Should these change significantly, the user should review the impact on the job market outlook. Some basic assumptions made for the 1974 to 1985 forecast period were:

1. The institutional framework of the U.S. economy will not change radically.
2. Current social, technological, and scientific trends will continue, including values placed on work, education, income and leisure.
3. The projections are assumed to be free of the immediate and direct effects of major events such as war.
4. Growth in output can be achieved without ecological disaster or serious environmental deterioration.
5. The economy will continue its gradual recovery from the high unemployment levels of the mid-1970's.

The Supply Side

Whenever possible, the supply of trained workers should be compared to the numbers of job openings. Finding a job may be difficult if there are too many persons competing for the same job.

Since the purpose of making employment projections is to point out potential problem areas, the supply-demand situation may change by 1985. The cutbacks in aerospace funding in the early 1970's, resulting in high unemployment levels for engineers, affected the number of students entering engineering colleges. As fewer engineers received degrees, the supply-demand ratio became better balanced.

An Example

Sue had a definite talent for art and design. In a career exploration class she discovered many jobs which might enable her to pursue a satisfying career. She elimirated several jobs in the areas of floristry, photography and industrial design due to a lack of interest. The remaining occupations were architects, commercial artists, interior designers and landscape architects. Although she wanted to go to college, the high cost forced her to think in terms of her employability after college. She looked into the job prospects for each occupation.

Occupation	1974 Employment	Openings 1974-85
Architects	40,000	3,000
Employment expected to increase much faster than the average for all occupations. Favorable opportunities (supply/demand).		
Painters & Sculptors	64,000	4,000
Competitive situation for talented & well-trained. Keen competition for those with average ability.		
Interior Designer	34,000	1,500
Competetive. Best outlook for college or professional school graduates with majors in interior design.		
Landscape Architects	12,000	900
Employment expected to grow much faster than average.		

Sue eliminated commercial artists, because she could realistically determine her talent as average. Interior design intrigued her, and she was willing to go to college, but after checking out salaries and opportunities for promotion, she decided against it. Salaries were low in comparison to architects, and advancement could be slow and competitive.

That left architects and landscape architects. Although Sue enjoyed gardening, she decided to pursue it as a leisure time activity. Since landscape architecture is a very small occupational class, there would be far fewer openings than for architects. In addition, architecture would allow her to use her creative talents - which attracted her to the field of art and design in the first place - and give her financial security and opportunity for advancement.

Since these were national statistics, our student decided to look into local area projections since she would like to stay near her home. She found that local projections were not quite as favorable for architects. Sue would have to decide whether to take her chances, hoping conditions would improve by the time she completed college, try to get a job in another area, or investigate other careers.

So, from a very few statistics, a variety of comparisons and conclusions can be made. It's important to remember that students are not the only users of employment projections. Vocational education, training programs, colleges and universities, government planners and private industry can all benefit from a scenario of the future labor market.

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